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X 420-9210 924-9290

(503) 906-9200

(425) 420-9200

(541) 383-9310

FAX 906-9210 FAX 382-7588

CHAIN OF CUSTODY REPORT

Work Order #: M1 06 005

CLIENT: Bristol						INVO	ICE TO):		7.						TURN		D REQUEST in Busin	ess Da	ys*
REPORT TO: And KI	anawette							0									¬. —	nic & Inorganic Analyses		
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PHONE: 907, 770. C	intea	/	,					- Jacque	ED ANA	-		-				STI	D	Please Specify		
PROJECT NUMBER: 2\09			3											-			ОТН			
SAMPLED BY: And			長	9	0											*Turnaro	und Requests	less than standard may incur F	ush Chai	rges.
CLIENT SAMPLE	SAMPLING		7 3	0	04											MATRIX	# OF			NCA WO
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3. 01 AM EXO16W		55	V	1	V											Sw	4			
4.01 AMR X 02WA		200	V													1558	approximate and the second	DIAMEX	026	W
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Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

6 December, 2001

Anne Kranawetter Bristol Environmental & Engineering 2000 W International Airport C#1 Anchorage, AK 99502-1116

RE: Amchitka

Enclosed are the results of analyses for samples received by the laboratory on 06/02/01 14:26. If you have any questions concerning this report, please feel free to contact me.

This report was recreated from a previously issued final report in order to provide an electronic copy. The final report used for these electronic copies may have been previously issued as an amended report due to client requested changes to sample names, etc. No data has changed since submission of the previously issued final, or amended, report.

Sincerely,

Stephen Wilson

Environmental Group Leader

112

Work Orders included in this report:

M106005



Anchorage, AK 99502-1116

Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-9223

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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported: 10/25/01 10:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
01AMRX01SW	M106005-01	Water	06/02/01 11:22	06/02/01 14:26
01AMRXT09SL	M106005-02	Soil	06/02/01 11:25	06/02/01 14:26
01AMRX01GW	M106005-03	Water	06/02/01 11:55	06/02/01 14:26
01AMRX02WA	M106005-04	Water	06/02/01 12:00	06/02/01 14:26
01AMRXT10SL	M106005-05	Soil	06/02/01 12:02	06/02/01 14:26

Project Manager: Anne Kranawetter

COC #48

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported: 10/25/01 10:06

Anchorage, AK 99502-1116 Project Manager: Anne Kranawetter

Diesel Hydrocarbons (C10-C25) and Heavy Oil (C25-C36) per AK102 and AK103 North Creek Analytical - Mobile Lab

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMRX01SW (M106005-01) Water					Sampled: 06/	02/01 Rece	eived: 06/02/	/01	
Residual Range Organics	ND	0.500	mg/l	1	AK102/103	06/02/01	06/04/01	0106007	
Diesel Range Organics	ND	0.500	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	105 %	75-125							
Surr: Triacontane	97.5 %	50-150							
01AMRXT09SL (M106005-02) Soil					Sampled: 06/	02/01 Rece	eived: 06/02/	/01	
Residual Range Organics	ND	300	mg/kg dry	1	AK102/103	06/02/01	06/03/01	0106005	
Diesel Range Organics	3960	150	"	"	"	"	"	"	D-14
Surr: 1-Chlorooctadecane	101 %	75-125							
Surr: Triacontane	118 %	50-150							
01AMRX01GW (M106005-03) Water					Sampled: 06/	02/01 Rece	eived: 06/02/	/01	R-05
Residual Range Organics	13.4	5.00	mg/l	1	AK102/103	06/02/01	06/03/01	0106007	D-11
Diesel Range Organics	223	5.00	"	"	"	"	"	"	D-14a
Surr: 1-Chlorooctadecane	88.5 %	75-125		•			•	•	•
Surr: Triacontane	89.5 %	50-150							

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Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka
Project Number: 21090

Reported:

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

10/25/01 10:06

Polychlorinated Biphenyls per EPA Method 8082 North Creek Analytical - Mobile Lab

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMRXT09SL (M106005-02) Soil					Sampled: 06/	02/01 Rece	eived: 06/02/	/01	A-01
Aroclor 1016	ND	167	ug/kg dry	1	EPA 8082	06/04/01	06/04/01	0106015	
Aroclor 1221	ND	334	"	"	"	"	"	"	
Aroclor 1232	ND	167	"	"	"	"	"	"	
Aroclor 1242	ND	167	"	"	"	"	"	"	
Aroclor 1248	ND	167	"	"	"	"	"	"	
Aroclor 1254	ND	167	"	"	"	"	"	"	
Aroclor 1260	ND	167	"	"	"	"	"	"	
Surr: 2,4,5,6-Tetrachloro-m-xylene	105 %	55-130				·			
Surr: Decachlorobiphenyl	118 %	55-130							

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported: 10/25/01 10:06

Project Manager: Anne Kranawetter

BTEX and MTBE per EPA Method 8021B North Creek Analytical - Mobile Lab

	1101	iii Ci cci ii	inary tre		one Lab				
Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMRX01SW (M106005-01) Water					Sampled: 06	/02/01 Rece	eived: 06/02/	01	
Benzene	ND	0.500	ug/l	1	!1B BTEX/M	Π 06/03/01	06/03/01	0106011	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Naphthalene	ND	10.0	"	"	"	"	"	"	
Surr: 4-BFB	91.2 %	75-120							
01AMRX01GW (M106005-03) Water					Sampled: 06	/02/01 Rece	eived: 06/02/	01	R-07
Benzene	ND	5.00	ug/l	1	!1B BTEX/M	Π 06/03/01	06/03/01	0106011	
Toluene	ND	5.00	"	"	"	"	"	"	
Ethylbenzene	ND	5.00	"	"	"	"	"	"	
Xylenes (total)	ND	10.0	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
Surr: 4-BFB	88.0 %	75-120							
01AMRX02WA (M106005-04) Water					Sampled: 06	/02/01 Rece	eived: 06/02/	01	
Benzene	ND	0.500	ug/l	1	!1B BTEX/M	Π 06/03/01	06/03/01	0106011	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Naphthalene	ND	10.0	"	"	"	"	"	"	
Surr: 4-BFB	94.0 %	75-120							

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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported: 10/25/01 10:06

Anchorage, AK 99502-1116 Project Manager: Anne Kranawetter

BTEX,MTBE and Naphthalene per EPA Method 8021B North Creek Analytical - Mobile Lab

Analyte	Result	Reporting Limit	Units	Dilution	n Method	Prepared	Analyzed	Batch	Notes
01AMRXT09SL (M106005-02) Soil					Sampled: 06/0	02/01 Rece	eived: 06/02/	01	
Benzene	ND	0.0604	mg/kg dry	50	!1B BTEX/MT	1 06/03/01	06/03/01	0106009	
Toluene	ND	0.242	"	"	"	"	"	"	
Ethylbenzene	ND	0.242	"	"	"	"	"	"	
Xylenes (total)	ND	0.483	"	"	"	"	"	"	
Naphthalene	ND	2.42	"	"	"	"	"	"	
Surr: 4-BFB	78.8 %	50-150							
01AMRXT10SL (M106005-05) Soil					Sampled: 06/0	02/01 Rece	eived: 06/02/	01	
Benzene	ND	0.130	mg/kg dry	50	!1B BTEX/MT	1 06/03/01	06/03/01	0106009	
Toluene	ND	0.519	"	"	"	"	"	"	
Ethylbenzene	ND	0.519	"	"	"	"	"	"	
Xylenes (total)	ND	1.04	"	"	"	"	"	"	
Naphthalene	ND	5.19	"	"	"	"	"	"	
Surr: 4-BFB	92.3 %	50-150							

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Bristol Environmental & Engineering Project: Amchitka
2000 W International Airport C#1 Project Number: 21090 Reported:
Anchorage, AK 99502-1116 Project Manager: Anne Kranawetter 10/25/01 10:06

Physical Parameters per APHA/ASTM/EPA Methods North Creek Analytical - Mobile Lab

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMRXT09SL (M106005-02) Soil					Sampled: 06/0	02/01 Rece	eived: 06/02/	01	
% Solids	77.7	0.0100 %	by Weight	t 1	Gravimetric	06/02/01	06/03/01	0106010	
01AMRXT10SL (M106005-05) Soil					Sampled: 06/0	02/01 Rece	eived: 06/02/	01	
% Solids	100	0.0100 %	by Weight	t 1	Gravimetric	06/02/01	06/03/01	0106010	

North Creek Analytical - Mobile Lab

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Bristol Environmental & Engineering

Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

0.203

0.199

Reported:

Anchorage, AK 99502-1116 Project Manager: Anne Kranawetter 10/25/01 10:06

Diesel Hydrocarbons (C10-C25) and Heavy Oil (C25-C36) per AK102 and AK103 - Quality Control

	North	Creek A	Analytica	al - Mo	bile Lal)				
		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 0106005 - 3545 ASE										
Blank (0106005-BLK1)				Prepare	d: 06/02/0	1 Analyz	ed: 06/03/0)1		
Residual Range Organics	ND	300 ı	mg/kg wet							
Diesel Range Organics	ND	150	"							
Surr: 1-Chlorooctadecane	22.6		"	23.4		96.6	75-125			
Surr: Triacontane	24.1		"	23.4		103	50-150			
LCS (0106005-BS1)				Prepare	d: 06/02/0	1 Analyz	ed: 06/03/0)1		
Diesel Range Organics	1310	150 ı	mg/kg wet	1250		105	75-125			
Surr: 1-Chlorooctadecane	19.2		"	23.4		82.1	75-125			
Surr: Triacontane	25.6		"	23.4		109	50-150			
LCS Dup (0106005-BSD1)				Prepare	d: 06/02/0	1 Analyz	ed: 06/03/0)1		
Diesel Range Organics	1330	150 ı	mg/kg wet	1250		106	75-125	1.52	20	
Surr: 1-Chlorooctadecane	23.4		"	23.4		100	75-125			
Surr: Triacontane	26.3		"	23.4		112	50-150			
Matrix Spike (0106005-MS1)	Sour	rce: M10503	38-03RE1	Prepare	d: 06/02/0	1 Analyz	ed: 06/03/0)1		
Diesel Range Organics	1260	150 ı	mg/kg wet	1180	ND	103	0-200			
Surr: 1-Chlorooctadecane	23.6		"	22.2		106	75-125			
Surr: Triacontane	23.8		"	22.2		107	50-150			
Batch 0106007 - 3520B Liq-Liq										
Blank (0106007-BLK1)				Prepare	d: 06/02/0	1 Analyz	ed: 06/03/0)1		
Residual Range Organics	ND	0.500	mg/l	<u> </u>						
Diesel Range Organics	ND	0.500	"							

0.200

0.200

North Creek Analytical - Mobile Lab

Surr: 1-Chlorooctadecane

Surr: Triacontane

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

102

99.5

75-125

50-150



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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported:

Anchorage, AK 99502-1116 Project Manager: Anne Kranawetter 10/25/01 10:06

Diesel Hydrocarbons (C10-C25) and Heavy Oil (C25-C36) per AK102 and AK103 - Quality Control

North Creek Analytical - Mobile Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 0106007 - 3520B Liq-Liq										
LCS (0106007-BS1)				Prepare	d: 06/02/0	1 Analyz	ed: 06/04/0)1		
Diesel Range Organics	5.23	0.500	mg/l	5.00		105	75-125			
Surr: 1-Chlorooctadecane	0.232		"	0.200		116	75-125			
Surr: Triacontane	0.199		"	0.200		99.5	50-150			
LCS Dup (0106007-BSD1)				Prepare	d: 06/02/0	1 Analyz	ed: 06/03/0)1		
Diesel Range Organics	5.48	0.500	mg/l	5.00		110	75-125	4.67	20	
Surr: 1-Chlorooctadecane	0.245		"	0.200		122	75-125			
Surr: Triacontane	0.207		"	0.200		104	50-150			

North Creek Analytical - Mobile Lab

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Bristol Environmental & Engineering

2000 W International Airport C#1 Project Number: 21090

Reported:

Anchorage, AK 99502-1116 P

Project Manager: Anne Kranawetter 10/25/01 10:06

Polychlorinated Biphenyls per EPA Method 8082 - Quality Control

Project: Amchitka

North Creek Analytical - Mobile Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 0106015 - 3545 ASE										
Blank (0106015-BLK1)				Prepared	d & Analy	zed: 06/0	14/01			
Aroclor 1016	ND	167 ug	/kg wet		-					
Aroclor 1221	ND	334	"							
Aroclor 1232	ND	167	"							
Aroclor 1242	ND	167	"							
Aroclor 1248	ND	167	"							
Aroclor 1254	ND	167	"							
Aroclor 1260	ND	167	"							
Surr: 2,4,5,6-Tetrachloro-m-xylene	88.7		"	66.7		133	55-130			S-08
Surr: Decachlorobiphenyl	89.3		"	66.7		134	55-130			S-08
LCS (0106015-BS1)				Prepared	d & Analy	zed: 06/0	04/01			
Aroclor 1254	826	167 ug	/kg wet	667		124	55-130			
Surr: 2,4,5,6-Tetrachloro-m-xylene	87.2		"	66.7		131	55-130			S-04
Surr: Decachlorobiphenyl	87.7		"	66.7		131	55-130			S-04
Matrix Spike (0106015-MS1)	Sour	ce: M106005	5-02	Prepared	d & Analy	zed: 06/0	14/01			
Aroclor 1254	863	167 ug	g/kg dry	855	ND	101	55-130			
Surr: 2,4,5,6-Tetrachloro-m-xylene	90.3		"	85.5		106	55-130			
Surr: Decachlorobiphenyl	103		"	85.5		120	55-130			
Matrix Spike Dup (0106015-MSD1)	Sour	ce: M106005	5-02	Prepared	d & Analy	zed: 06/0	04/01			
Aroclor 1254	838	167 ug	g/kg dry	857	ND	97.8	55-130	2.94	40	
Surr: 2,4,5,6-Tetrachloro-m-xylene	91.6		"	85.7		107	55-130			
Surr: Decachlorobiphenyl	104		"	85.7		121	55-130			

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Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka Project Number: 21090

Reported: 10/25/01 10:06

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

BTEX and MTBE per EPA Method 8021B - Quality Control

North Crook Analytical

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		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Blank (0106011-BLK1)				Prepared	d & Analy	zed: 06/0	3/01			
Benzene	ND	0.500	ug/l	Tropuro	<u></u>	/ LCG . 00/ 0	757 01			
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Naphthalene	ND	10.0	"							
Surr: 4-BFB	88.1		"	100		88.1	75-120			
LCS (0106011-BS1)				Prepared	d & Analy	zed: 06/0	03/01			
Benzene	18.1	0.500	ug/l	20.0		90.5	67-130			
Toluene	17.5	0.500	"	20.0		87.5	75-126			
Ethylbenzene	18.9	0.500	"	20.0		94.5	76-124			
Xylenes (total)	53.1	1.00	"	60.0		88.5	75-126			
Naphthalene	22.1	10.0	"	20.0		110	75-126			
Surr: 4-BFB	88.7		"	100		88.7	75-120			
Matrix Spike (0106011-MS1)	Source: M106005-01			Prepared & Analyzed: 06/03/01						
Benzene	18.0	0.500	ug/l	20.0	ND	90.0	67-130			
Toluene	18.0	0.500	"	20.0	ND	90.0	75-126			
Ethylbenzene	19.1	0.500	"	20.0	ND	95.5	76-124			
Xylenes (total)	53.7	1.00	"	60.0	ND	89.5	75-126			
Naphthalene	17.2	10.0	"	20.0	ND	86.0	67-130			
Surr: 4-BFB	89.6		"	100		89.6	75-120			
Matrix Spike Dup (0106011-MSD1)	Sou	Source: M106005-01			Prepared & Analyzed: 06/03/01					
Benzene	18.0	0.500	ug/l	20.0	ND	90.0	67-130	0.00	13	
Toluene	18.0	0.500	"	20.0	ND	90.0	75-126	0.00	13	
Ethylbenzene	19.9	0.500	"	20.0	ND	99.5	76-124	4.10	15	
Xylenes (total)	53.6	1.00	"	60.0	ND	89.3	75-126	0.186	13	
Naphthalene	18.8	10.0	"	20.0	ND	94.0	67-130	8.89	13	
Surr: 4-BFB	88.5		"	100		88.5	75-120			

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka Project Number: 21090

Reported:

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

10/25/01 10:06

BTEX,MTBE and Naphthalene per EPA Method 8021B - Quality Control

North Creek Analytical - Mobile Lab

		Reporting		Spike	Source		%REC		RPD		
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	ĺ

Batch 0106009 - MeOH Extraction	on						
Blank (0106009-BLK1)				Prepared &	Analyzed: 06/0	3/01	
Benzene	ND	0.0250 n	ng/kg wet				
Toluene	ND	0.100	"				
Ethylbenzene	ND	0.100	"				
Xylenes (total)	ND	0.200	"				
Naphthalene	ND	1.00	"				
Surr: 4-BFB	2.30		"	2.50	92.0	50-150	
LCS (0106009-BS1)				Prepared &	Analyzed: 06/0	3/01	
Benzene	2.10	0.0250 n	ng/kg wet	2.50	84.0	69-138	
Toluene	2.17	0.100	"	2.50	86.8	53-151	
Ethylbenzene	2.38	0.100	"	2.50	95.2	61-141	
Xylenes (total)	6.48	0.200	"	7.50	86.4	62-141	
Naphthalene	3.19	1.00	"	2.50	128	65-135	
Surr: 4-BFB	2.49		"	2.50	99.6	50-150	

North Creek Analytical - Mobile Lab



Anchorage, AK 99502-1116

RPD

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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported: 10/25/01 10:06

Project Manager: Anne Kranawetter

Notes and Definitions

A-01	Acceptance criteria for CCV was exceeded high. Sample results are non detect and are not affected. DoD QSM Draft 5.9.4.2.E.1
D-11	Detected hydrocarbons in the heavy/oil range appear to be due to overlap of diesel range hydrocarbons.
D-14	Hydrocarbon pattern and range are consistent with 01AM1103MI - M106001-01.
D-14a	Hydrocarbon pattern and range are consistent with 01AMA1103MI - M106001-01.
R-05	Reporting limits raised due to dilution necessary for analysis.
R-07	Reporting limits raised due to matrix interference and/or dilution necessary for analysis.
S-04	The surrogate recovery for this sample is outside of method established control limits.
S-08	Surrogate recovery is above control limits. Since no analytes were detected in the sample, the quality of the data has not been affected.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)

North Creek Analytical - Mobile Lab

Relative Percent Difference

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception
			Report recreated from: \\sisters\elmnt\Report\M106005 FINAL 10 25 01 1006.mdb
			Default Report (not modified)
0106005-BLK1	AK102/103	Residual Range Organics	Additional analyte reported
0106007-BLK1	AK102/103	Residual Range Organics	Additional analyte reported
0106015-BLK1	8082 PCB	Decachlorobiphenyl	S-08
0106015-BLK1	8082 PCB	2,4,5,6-Tetrachloro-m-xylene	S-08
0106015-BLK1	8082 PCB	2,4,5,6-Tetrachloro-m-xylene	Exceeds upper control limit
0106015-BLK1	8082 PCB	Decachlorobiphenyl	Exceeds upper control limit
0106015-BS1	8082 PCB	Decachlorobiphenyl	Exceeds upper control limit
0106015-BS1	8082 PCB	Decachlorobiphenyl	S-04
0106015-BS1	8082 PCB	2,4,5,6-Tetrachloro-m-xylene	S-04
0106015-BS1	8082 PCB	2,4,5,6-Tetrachloro-m-xylene	Exceeds upper control limit
M106005-01	AK102/103	Residual Range Organics	Additional analyte reported
M106005-02	8082 PCB		A-01
M106005-02	AK102/103	Residual Range Organics	Additional analyte reported
M106005-02	AK102/103	Diesel Range Organics	D-14
M106005-03	8021B BTEX/MTBE/N		R-07
M106005-03	AK102/103		R-05
M106005-03	AK102/103	Diesel Range Organics	D-14a
M106005-03	AK102/103	Residual Range Organics	Additional analyte reported
M106005-03	AK102/103	Residual Range Organics	D-11